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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/682,654

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David Guy Hill

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EXAMINER

RAMIREZ, JOHN FERNANDO

ART UNIT

PAPER NUMBER

3737

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/682,654	Applicant(s) HILL, DAVID GUY	
	Examiner JOHN F. RAMIREZ	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/03/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☐ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments, see remarks, filed August 3, 2007, with respect to have been fully considered and are persuasive. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

However, the following new office action is provided in order to expedite the prosecution of this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6, 11, 12, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rienmueller et al. (US 5,067,494) in view of Kotmel et al. (US 2003/0055331) and in further view of Kotmel et al. (US 2003/0051733).

In relation to claims 1, 4, 6, 11, 12 and 19-21, Rienmueller et al. discloses an imaging system for lung imaging comprising a trigger for triggering an imaging scan (col. 2, lines 31-68) of the patient based on at least one of air flow in the lung, volume of the lung, movement of the lung, and density of the lung (see abstract). Rienmueller

does not disclose a system for scanning the lung cross-section during at least one of an inspiration and an expiration of air by the patient to obtain local lung function image data, and combining lung function data and the lung image data for use in diagnosis of the patient. However, a system for scanning the lung cross-section during at least one of an inspiration and an expiration of air by the patient to obtain local lung function image data is conventional in the art as evidenced by the teachings of Kotmel et al. (US 2003/0055331) (see paragraphs [006-008]) and Kotmel et al. (US 2003/0051733) (see abstract, see paragraphs [0006], [0026-0027], [0030], and [0110]).

The Kotmel et al. (US 2003/0051733) patent teaches a method for assessing the level of pulmonary disease by combining lung function data and the lung image data for use in diagnosis of the patient (see abstract, paragraphs [0006], [0026-0027], [0030], and [0110]).

Based on the above observations, for a person of ordinary skill in the art, modifying the method disclosed by Rienmueller et al. with the above discussed enhancements would have been considered obvious because such modifications would have provided better diagnostic results to determine the course of treatment for the patient.

Claims 2, 6, 9, 10, 13, 14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rienmueller et al. (US 5,067,494) in view of Kotmel et al. (US 2003/0055331), in further view of Kotmel et al. (US 2003/0051733) and in further view of Plewes (US 4,773,087).

With respect to claims 2, 6, 9, 10, 13, 14, and 18, Rienmueller et al. and Kotmel et al. teach all the limitations of the claimed subject matter except for mentioning specifically the steps of performing a preview scan of the patient to identify the lung cross-section for imaging, scanning and obtaining lung image data during a sweep of at most 33ms, scanning step obtains lung image data during a sweep of at most 50ms, and a trigger further triggers a preview scan of the patient to identify the portion of the lung for imaging scan.

However, the steps of (1) performing a preview scan of the patient to identify the lung cross-section for imaging, (2) scanning and obtaining lung image data during a sweep of at most 33ms, (3) scanning step obtains lung image data during a sweep of at most 50ms, and (4) a trigger further triggers a preview scan of the patient to identify the portion of the lung for imaging scan are considered conventional in the art as evidenced by the teachings of Plewes (US 4,773,087).

The Plewes patent teaches the steps of performing a preview scan of the patient to identify the lung cross-section for imaging, scanning and obtaining lung image data during a sweep of at most 33ms, scanning step obtains lung image data during a sweep of at most 50ms, and a trigger further triggers a preview scan of the patient to identify the portion of the lung for imaging scan (col.10, lines 25-44; col. 6, lines 32-44 and col. 7, lines 34-42).

Based on the above observations, for a person of ordinary skill in the art, modifying the method disclosed by Rienmueller et al. and Kotmel et al., with the above discussed enhancements would have been considered obvious because such

modifications would have improved image quality by reducing the exposure period and scanning artifacts.

Claims 5, 7, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rienmueller et al. (US 5,067,494) in view of Kotmel et al. (US 2003/0055331), in further view of Kotmel et al. (US 2003/0051733) and in further view of in view of Sontag et al. (US 6,298,260).

Rienmueller et al. and Kotmel et al. teach all the limitations of the claimed subject matter except for mentioning specifically the steps of processing the lung function data to generate a plot of lung attenuation versus time or area versus time, scanning step dynamically obtains the lung image data as at least one of air flow and air capacity in the lung are changing, scanning step obtains the lung image data with at least one of air flow and air capacity in the lung held constant, the reconstruction system processes the lung image data to generate a plot of lung attenuation versus time, and the data acquisition system dynamically obtains the lung image data as at least one of air flow and air capacity in the lung are changing.

However the steps of (1) processing the lung function data to generate a plot of lung attenuation versus time or area versus time, (2) scanning step dynamically obtains the lung image data as at least one of air flow and air capacity in the lung are changing, (3) scanning step obtains the lung image data with at least one of air flow and air capacity in the lung held constant, (4) the reconstruction system processes the lung image data to generate a plot of lung attenuation versus time, and (5) the data

acquisition system dynamically obtains the lung image data as at least one of air flow and air capacity in the lung are changing are considered conventional in the art as evidenced by the teachings of Sontag et al. (US 6,298,260).

The Sontag et al. patent teaches the steps of processing the lung function data to generate a plot of lung attenuation versus time or area versus time, scanning step dynamically obtains the lung image data as at least one of air flow and air capacity in the lung are changing, scanning step obtains the lung image data with at least one of air flow and air capacity in the lung held constant, the reconstruction system processes the lung image data to generate a plot of lung attenuation versus time, and the data acquisition system dynamically obtains the lung image data as at least one of air flow and air capacity in the lung are changing (Fig. 5, col. 8, lines 53-65 and col. 9, lines 23-46).

Based on the above observations, for a person of ordinary skill in the art, modifying the method disclosed by Rienmueller et al., with the above discussed enhancements would have been considered obvious because such modifications would have improved diminished inaccuracies in the assumed spatial location of the portion of the patient being treated or diagnosed which arise from the patient's respiration.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN F. RAMIREZ whose telephone number is (571)272-8685. The examiner can normally be reached on (Mon-Fri) 7:00 - 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. F. R./
Examiner, Art Unit 3737

/Brian L Casler/
Supervisory Patent Examiner, Art Unit 3737